Acoustic Treatment for Mechanical Rooms

Reducing Equipment Noise for Quieter, More Comfortable Buildings

Mechanical rooms play a critical role in any building, housing equipment such as HVAC systems, pumps, compressors, and generators. However, these machines are also major sources of **noise and vibration**, which can disrupt nearby workspaces, residential units, or sensitive environments like hospitals and schools.

At **3D Design and Construction**, we provide specialized **acoustic treatment solutions** to manage and minimize noise generated in mechanical rooms, enhancing comfort, efficiency, and overall building performance.

Purpose of Acoustic Treatment

The primary goal of acoustic treatment in mechanical rooms is to **control airborne noise and vibration** at the source, and prevent it from transferring into occupied areas. This is achieved through:

- **Sound absorption** to reduce internal reverberation
- **Sound isolation** to block noise from escaping
- **Vibration control** to prevent structure-borne transmission

Proper acoustic design ensures mechanical systems run quietly without affecting the comfort or functionality of surrounding spaces.

Our Treatment Solutions Include:

- **Acoustic Wall & Ceiling Panels**
  Absorb internal noise and prevent echo buildup within the room.
- **Soundproof Enclosures & Barriers**
  Contain loud machinery and isolate noise at the source.
- **Anti-Vibration Mounts & Floating Floors**
  Minimize structure-borne vibration by decoupling equipment from floors or walls.
- **Duct Silencers & Acoustic Lagging**
  Control noise carried through air ducts, pipes, and exhaust systems.
- **Acoustic Doors & Sealing Systems**
  Prevent sound leakage through doorways and service penetrations.

Key Benefits

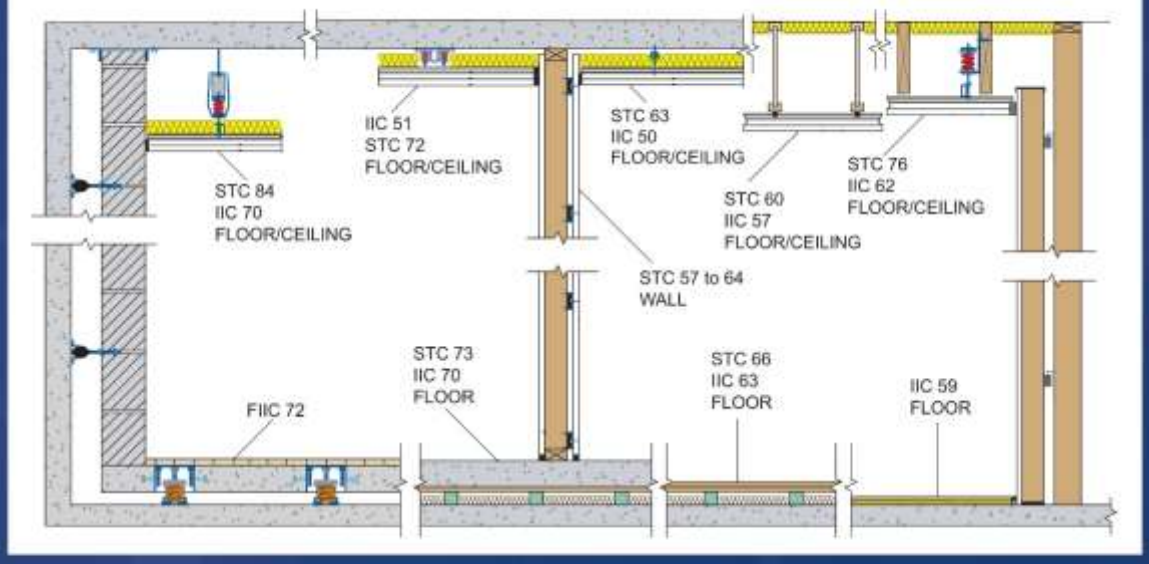
- **Enhanced Occupant Comfort**
  Prevents disruptive mechanical noise from reaching living, working, or patient areas.
- **Regulatory Compliance**
  Meets local building codes and acoustic standards for noise control.
- **Improved Equipment Lifespan**
  Reduces wear caused by excessive vibration, lowering maintenance needs.
- **Productivity & Wellness**
  Supports focus, well-being, and tranquility in noise-sensitive spaces.
- **Added Property Value**
  Quiet, high-performing buildings appeal more to tenants, buyers, and occupants.

Ideal for:

- Commercial and corporate buildings
- Hotels and luxury residences
- Hospitals and healthcare facilities
- Schools and universities
- Industrial facilities and data centers

Looking to reduce mechanical room noise?

Contact **3D Design and Construction** for a tailored acoustic solution that protects your building's performance, and your occupants' peace of mind.



Noise Control Solutions for Floors, Walls, Ceilings, and Structures

IsoMax: Resilient Sound Isolation Wall and Ceiling Clip
Patent No. 7,093,814

- Effective sound control at low installed cost
- Error free installation of standard drywall furring channel
- Low-profile design; maximizes available occupied space
- Best performance for the fewest dollars spent to build noise control ceilings and walls
- Exclusive UL design L583 offers 1-hour fire rating for typical wood-framed ceiling composites

Description	STC	Sections
5/8" Gypsum Board 2x4 **Wood Stud** Fiberglass Insulation **KINETICS™ IsoMax Clips** 7/8" Drywall Furring Channel 5/8" Gypsum Board	57	
2 Layers of 5/8" Gypsum Board 2x4 **Wood Stud** Fiberglass Insulation **KINETICS™ IsoMax Clips** 7/8" Drywall Furring Channel 2 Layers of 5/8" Gypsum Board	64	
2 Layers of 5/8" Gypsum Board 1-5/8" x 3-5/8" **Steel Stud** Fiberglass Insulation **KINETICS™ IsoMax Clips** 7/8" Drywall Furring Channel 2 Layers of 5/8" Gypsum Board	63	

Sound Damp2
Add to second layer of drywall for improved STC

- Great for renovations
- Tested up to STC 53
- Easy to apply
- Water Cleanup

Concrete and Wood-Framed Ceiling Isolation Systems

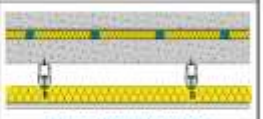
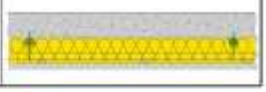
ICC: Deck-Suspended Ceiling Hanger

- Maximum natural frequency of 4.4 Hz under lightest typical load conditions
- Multiple features incorporated into the design ensure inexpensive installation; eliminates tying wire
- Spring/neoprene cup combination improves performance against low-frequency noise

Contact your local sales rep for wire-tie and other hanger options

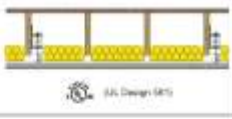
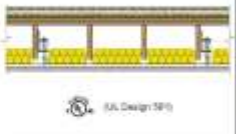
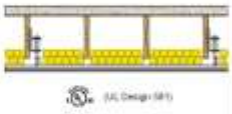
IsoGrid: Quick-Connect Ceiling Hanger

- Dramatic labor savings over conventional ceiling hangers
- Meet code requirements while maximizing ceiling height
- Various attachment methods allow for installation on a variety of ceiling structures
- Known deflection rates ensure performance under design loads

Description	STC	IIC	Sections
4" Concrete Slab 1/2" Plywood **2" KINETICS™ RIM-Q-2-16** 6" Concrete Slab **KINETICS™ ICC Isolation Hanger** Cold Rolled Channel (CRC) Drywall Furring Channel 3-1/2" Fiberglass Insulation 2 Layers 5/8" Gypsum Board	94	82	
6" Concrete Slab **KINETICS™ ICC Isolation Hanger** Cold Rolled Channel (CRC) Drywall Furring Channel 3-1/2" Fiberglass Insulation 2 Layers 5/8" Gypsum Board	84	70	
6" Concrete Slab **KINETICS™ KSCH Ceiling Hanger** Rock Wool Batts Cold Rolled Channel (CRC) Drywall Furring Channel 2 Layers 5/8" Gypsum Board	72	51	
6" Concrete Slab **KINETICS™ IsoGrid Ceiling Hanger** 6" Airspace Filled w/ Insulation Cold Rolled Channel (CRC) Drywall Furring Channel 2 Layers 5/8" Gypsum Board	63	50	

KSCH: Super-Compact Ceiling Hanger
Patent No. 7,028,432

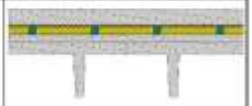
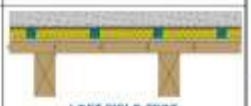
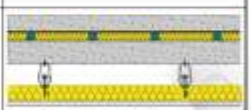
- Low ~4" airspace using 7/8" drywall furring channel with full 1-inch spring deflection; Multiple mounting options
- Meets building code for STC/IIC 50 in smallest possible space

Description	STC	IIC	Sections
5/16" Parquet Flooring 5/8" Plywood 2 x 10 Joists **KINETICS™ ICW Ceiling Hanger** Cold Rolled Channel (CRC) Drywall Furring Channel 3-1/2" Fiberglass Insulation 2 Layers 5/8" Gypsum Board	59	52	
Hardwood Floor Over Vapor Barrier Mat 1-1/4" AccuCrete Slab 3/8" AccuQuiet Underlayment 3/4" Plywood 2 Layers Existing 1" x 6" Wood Subfloor 2x10 Joists 16" OC **KINETICS™ ICW Ceiling Hanger** 6" Fiberglass Insulation Cold Rolled Channel (CRC) Drywall Furring Channel 2 Layers 5/8" Gypsum Board	FSTC 57	FIIC 62	
3/8" Wood Floor 1-1/2" Concrete Slab 3/4" Plywood 2 x 10 Joists **KINETICS™ ICW Ceiling Hanger** Cold Rolled Channel (CRC) Drywall Furring Channel 3-1/2" Fiberglass Insulation 2 Layers 5/8" Gypsum Board	76	62	

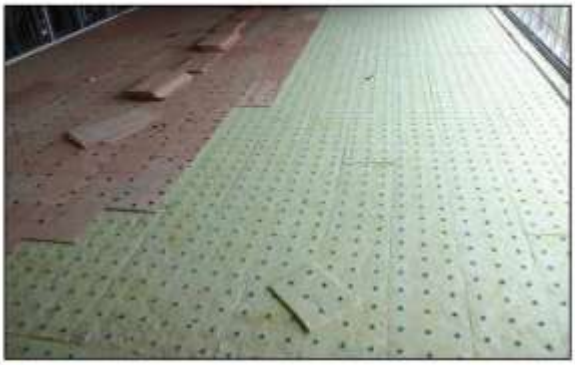
ICW: Wood-Framed Ceiling Hanger

- ***Exclusive*** UL design L581 offers 1-hour fire rating for typical wood-framed ceiling composites
- Maxium natural frequency of 4.4Hz under lightest typical loads
- Actual installed load can vary between 75% and 150% of rated load without significant impact to ceiling performance
- Superior noise control for wood-framed construction without floor underlayment
- Ideal solution for new-build and renovations

Concrete Floating Floor Systems

Description	STC	IIC	Sections
2" Topping Slab Precast Concrete 14" Tee	54	24	
4" Concrete Slab 1/2" Plywood **2" KINETICS™ RIM L-2-12** 2" Topping Slab Precast Concrete 14" Tee	73	70	
4" Concrete Structural Floor 6" Concrete Structural Floor	49 53	25 27	
3" Lightweight Concrete (polished) 1/2" Plywood **2" KINETICS™ RIM L-2-16** 3-1/2" Wood Deck Subfloor Steel Beam and Glue Lam Joist Support **No Ceiling**	NNIC* 62	FIIC 54	 *LOFT FIELD TEST*
4" Concrete Slab 1/2" Plywood **2" KINETICS™ RIM-Q-2-16** 6" Concrete Slab	72	62	
4" Concrete Slab 1/2" Plywood **2" KINETICS™ RIM-Q-2-16** 6" Concrete Slab **KINETICS™ ICC Isolation Hanger** Cold Rolled Channel (CRC) Drywall Furring Channel 3-1/2" Fiberglass Insulation 2 Layers 5/8" Gypsum Board	94	82	 *THE ULTIMATE SOLUTION*

*Normalized Noise Isolation Class, field test for airborne noise reduction



RIM: Roll-Out Isolation Mat System

- Design for any load range
- Easy to create 1", 2", 3", and 4" airspaces
- Fast, simple, inexpensive installation
- Installation and supervision available
- RIM System successfully installed for over 45 years
- Natural Frequency constant over a wide load range
- Slab cast-in-place with no lifting required; trades back on the job as soon as concrete cures

Sound Deadener
Model KDD-3642

Application

KDD-3642 Sound Deadener is suitable in a wide variety of applications where it is intended to damp or eliminate the "tinniness" type noise caused by vibrating metal surfaces and panels. The KDD-3642 Sound Deadener should be applied to a clean dry surface at room temperature with a hand roller to ensure even pressure. Firm even pressure is required to bond damper to substrate. Before application the product should be staged at temperature higher than 50°F for not less than 3 hours.

Typical applications include:

- Bodies, doors, firewalls, and floors of trucks, buses, agricultural, and off-highway equipment.
- Metal office furniture
- Sinks, bathtubs, and shower stalls
- Air Conditioners
- Appliance cabinets
- Rapid transit or railway cars
- Recreational vehicles
- Chutes, bins, & hoppers
- Motor and transformer housings
- Machine housing belt guards
- Sheet metal ducts, mixing boxes, and terminal Units

Description

KDD-3642 Sound Deadener consists of a bituminous sheet damping material designed for cost effective vibration damping. Model KDD-3642 Sound Deadener effectively reduces the resonant vibration of sheet metal panels that radiate noise. It also reduces the loudness and duration caused by random impact noises when panels are struck. The material is rated self extinguishing, is black in color, is available in 36" x 42" x 0.060" and weighs 0.579 PSF. The material can be slit, punched, or die cut into parts to meet the customer's specifications.

Model KDD-3642 contains a pressure-sensitive adhesive on one side which is protected by an easily strippable release liner. The adhesive is a high performance acrylic adhesive which exhibits high tack for easy installation resulting in 100% contact for maximum damping effectiveness.

Free Standing
Spring Isolators
Model FDS-4

Description

Kinetics Model FDS Spring Vibration Isolators consist of high deflection, free-standing, unhoused, large diameter, laterally stable steel springs assembled into an upper load plate and leveling assembly. To assure stability, the spring isolators have lateral spring stiffness greater than 1.0 times the rated vertical stiffness and are designed to provide a minimum 50% overload capacity. Springs are polyester powder coated, with a 1,000-hour salt spray rating per ASTM B-117. In lighter capacities, FDS Spring Isolators have molded neoprene bottom load plate assemblies. In heavier capacities, springs are welded to the load plate assemblies and are furnished with a neoprene noise isolation pad. FDS Isolators have provisions for bolting the isolator to the structure. FDS isolators are available with deflections to 4" (102 mm) and with load capacities to 23,200 lbs. (10,523 kg) as standard products. Custom isolators with higher deflection and greater load capacities are also available. Kinetics Model FDS Spring Isolators are highly effective for control of both high and low frequency vibration produced by reciprocating air or refrigeration compressors, pumps, packaged air-handling and air-conditioning equipment, centrifugal and axial fans, internal combustion engines, etc.

Application

Kinetics Model FDS spring mounts are recommended for use in isolating floor mounted sources of noise and vibration located near critically quiet areas.

Model FDS spring mounts are typically used to reduce the transmission of noise and vibration from low speed mechanical equipment into a building structure. Operating static deflections are available up to 4" (102 mm) to compensate for long span flexible floor structures.

Model FDS spring mounts are used in a wide range of applications, some requiring Kinetics equipment bases in addition to spring isolators, and can be used to support and isolate the following equipment types: reciprocating air or refrigeration compressors, close coupled and basemounted pumps, packaged air-handling and refrigeration equipment, centrifugal fans, internal combustion engines, and similar equipment. Model FDS Isolators are for use on equipment that is not subject to lateral forces such as wind.

Free Standing
Spring Isolators
Model FDS 1 and 2

Description

Kinetics Model FDS Spring Vibration Isolators consist of high deflection, free-standing, unhoused, large diameter, laterally stable steel springs assembled into an upper load plate and leveling assembly. To assure stability, the spring isolators have lateral spring stiffness greater than 1.0 times the rated vertical stiffness and are designed to provide a minimum of 50% overload capacity. Springs are polyester powder coated, with a 1000-hour salt spray rating per ASTM B-117. In lighter capacities, FDS Spring Isolators have molded neoprene bottom load plate assemblies. In heavier capacities, springs are welded to the load plate assemblies and are furnished with a neoprene noise isolation pad. FDS Isolators have provisions for bolting the isolator to the structure. FDS isolators are available with deflections to 2" (51 mm) and with load capacities to 18,000 lbs. (8165 kg) as standard products. Custom isolators with higher deflection and greater load capacities are also available. Kinetics Model FDS Spring Isolators are highly effective for control of both high and low frequency vibration produced by reciprocating air or refrigeration compressors, pumps, packaged air handling and air conditioning equipment, centrifugal and axial fans, internal combustion engines, etc.

Application

Kinetics Model FDS spring mounts are recommended for use in isolating floor mounted sources of noise and vibration located near critically quiet areas.

Model FDS spring mounts are typically used to reduce the transmission of noise and vibration from low speed mechanical equipment into a building structure. Operating static deflections are available to 2" (51 mm) to compensate for long span floor structures.

Model FDS spring mounts are used in a wide range of applications, some requiring Kinetics equipment bases in addition to spring isolators, and can be used to support and isolate the following equipment types: reciprocating air or refrigeration compressors, close coupled and base mounted pumps, packaged air handling and refrigeration equipment, centrifugal fans, internal combustion engines, and similar equipment. Model FDS Isolators are for use on equipment that is not subject to lateral forces such as wind.

Fiberglass Isolators
Model KIP

Description

KIP fiberglass noise, shock, and vibration isolators offer many advantages versus natural rubber, neoprene, or other elastomeric pads. Uniquely permanent and dynamically predictable, due to precise manufacturing methods using inorganic materials, this isolation media provides freedom of design and use unprecedented by any other material.

KIP isolator is a high-density matrix of compressed molded fiberglass; individually coated with a flexible, moisture-impervious elastomeric membrane, designed to allow controlled air movement in the fiber media. The pumping action of air between fibers provides viscous damping, reducing motion caused by transient shock and vibration.

A range of sizes, densities, and spring rates are available to provide load-bearing capacities from 5 to 500 PSI (0.35 to 35 kg per sq. cm) of pad surface area. The matrix of glass leaf springs is bonded at all fiber intersections with a water-resistant binder during the molding process, under controlled heat and pressure. The material is then stabilized by ten (10) precompression cycles to 300% the maximum published load capacity for the media.

KIP fiberglass isolators uniquely allow a wide range of loading on a given isolator while maintaining a constant natural frequency. Natural frequency of KIP fiberglass media is controlled by isolator thickness rather than static deflection as with linear steel springs. To determine the natural frequency for other than 1" (25 mm) isolator thickness, the 1" (25 mm) thick isolator natural frequency is divided by the square root of the actual thickness to be used, i.e. the natural frequency of a 4" (102 mm) thick isolator is one-half the natural frequency of a 1" (25 mm) isolator at the same load for the same density material.

KIP fiberglass is unique as a structural support in that applied loads are substantially below precompression loads thus providing 200% overload safety factor. The result is permanent resiliency with constant natural frequency.

KIP fiberglass is non-corrosive, non-combustible, non-absorbent, and resists rust, ozone, mildew and fungus. It is vermin proof, will not shrink, swell, or decompose. Isolation characteristics of the media are constant over a temperature range of -40°F to 250°F (-40°C to 121°C).

Features

- Inorganic fiberglass media
- Flexible elastomeric coating
- Constant natural frequency in wide load range
- Permanent and predictable resiliency
- Predictable dynamic response
- High-energy dissipation
- Controlled viscous damping
- Load capacities 5 PSI to 500 PSI (0.35 to 35 kg per sq. cm.)

Application

KINETICS™ KIP fiberglass isolators can be applied in a wide range of noise, shock, and vibration isolation uses, and are recommended whenever predictable dynamic response and permanent load support characteristics are important.

Typical noise isolation applications include the use of KIP fiberglass isolators integrated into RIM and FC to create high STC and IIC floating floors.

Typical shock isolation applications include the use of KIP fiberglass isolators as support mounts for punch presses, metal shears, and similar industrial process machinery.

Typical vibration isolation applications include the use of KIP fiberglass isolators as support mounts for high speed fans, pumps, and chillers, on grade, having operating speeds of 1750 RPM and higher.

KIP fiberglass isolators are available in a wide range of standard and special mount configurations for various load ranges, natural frequencies, and other support characteristics.

Isolation Hanger
Model SHAA and SHAB

Light-Duty Spring Vibration Isolation Hangers

Application

- Fan coil boxes
- Light-duty fans
- Piping
- Duct work

With lighter weight construction materials used in office buildings, schools and hospitals today, it does not take much energy to generate annoying vibration problems. The SHAA and SHAB rubber and spring vibration isolation hangers are designed to provide high-efficiency isolation from structure-borne vibration for lighter point load applications. It is important the spring is adequately loaded to achieve the desired natural frequency. The SHAA provides 1" (25 mm) deflection at loads of 25, 45 and 55 pounds (11, 20 and 25 kg) and the SHAB provides deflection of 0.5" (13 mm) under loads of 15, 30 and 70 pounds (7, 14 and 32 kg). The SHAA and SHAB vibration isolation hangers are complete with molded neoprene rubber bottom caps which hold the spring in place, provide protection against short-circuiting due to rod misalignment, and isolate against high frequency vibration from fan blade passage noise. These vibration isolation hangers are shipped completely assembled and are designed to be used with threaded rod through 3/8" (10 mm) in diameter.

Description

Model SHAA and SHAB spring hangers consist of freestanding, laterally stable steel springs in series with a molded elastomeric element assembled into a stamped and welded hanger bracket. The brackets are zinc plated and incorporate color-coded spring elements. To assure stability, the spring element has a minimum lateral spring stiffness of 1.0 times the rated vertical stiffness. The hanger brackets will carry a 500% overload without failure. The spring hangers are available in deflections from 0.5" to 1" (13 mm to 25 mm) and in capacities from 15 to 70 pounds (7 to 32 kg).

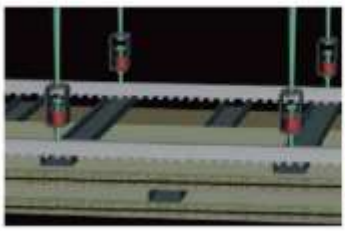
VIBRATION ABSORBER

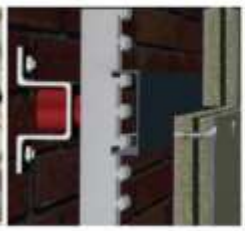
CEILING VIBRATION ABSORBER / WALL VIBRATION ABSORBER

Ceiling vibration absorber is made of 100% original high polymer vibration damping adhesive ,the aging resistance time and the damping coefficient are five times that of the refurbishing adhesive,thereby ensuring the permanency and safety of vibration damping and sound insulation effect in the aspect of hardware quality.It is an effective way to cut off the structure-borne sound transmission of the suspended ceiling and the original base building ceiling.Wall vibration absorber is suitable for installing and fixing the wall reinforced sound insulation structure layer of form the sound insulation layer between the sound wave irradiation surface and the original base wall.

SPECIFICATION

Name	Ceiling vibration absorber / Wall vibration absorber
Comon Size	Ceiling: W 50mm* L100mm*T 50mm Wall: W 50mm* L110mm*T 50mm
Bearing weight	Ceiling:25KG-55KG Wall:25KG-60KG
Effective frequency range	80Hz-150Hz
Install method	Expansions Screw Fix
Application	Bar, KTV room ,Music studio,etc.






VIBRATION ABSORBER

SOUND INSULATION VIBRATION KEEL

Sound insulation vibration keel adopt natural rubber materials and light steel keel,Nature rubber is a soft link with wall and light steel keel,It cut off the sound bridge and have good reduction for low and high frequency vibration.The empty space install method for keel ,have obvious sound insulation and vibration effect in wide frequency.The damping rubber also has sound insulation and vibration effect for wall body vibration in low frequency.The single structure and less space,low natural vibration frequency good vibration effect keel ,which is an idea device for wall body.

COMMON SIZE

Keel	35mm， 67mm， 25mm Width in top:35mm,width in bottom:67mm,height:25mm
Rubber	92mm， 25.5mm， 22mm W：25.5mm*L 92mm*H22 mm

GROUND VIBRATION ABSORBER

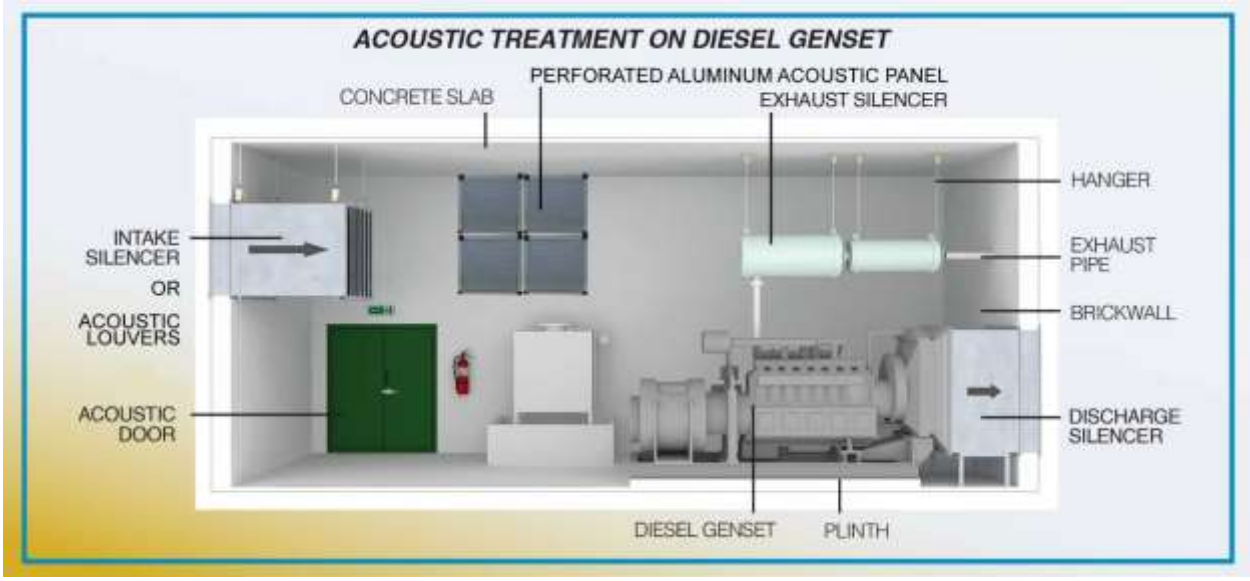
Ground vibration absorber adopts the short travel ultra-strong metal damping spring,and the high polymer vibration damping rubber block is adhered to the bottom plate of the vibration absorber to form the dual-material wideband vibration absorbing structure.The application of ground vibration absorber for constructing the floating floor can effectively cut off the impact of vibration radiation layer on the original base layer,thereby improving the low frequency vibration and impact sound insulation properties.

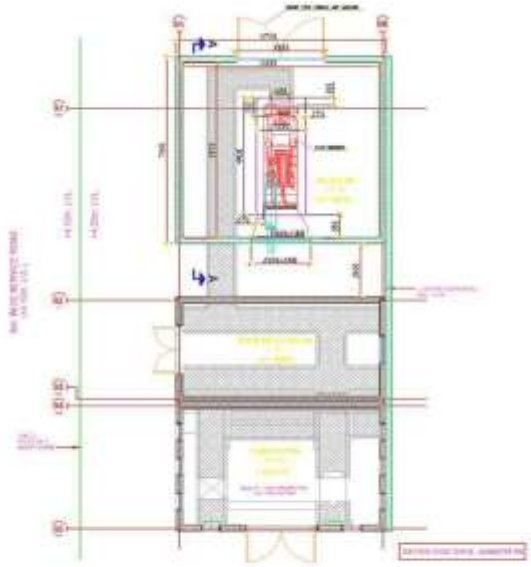
COMMON SIZE

W 100mm* L100mm*T 85mm

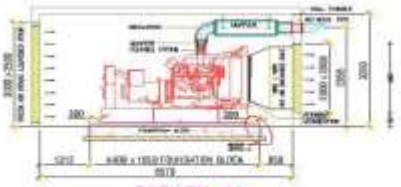
APPLICATION

Bar, KTV room ,Music studio,etc.

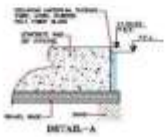

ACOUSTIC TREATMENT ON DIESEL GENSET
CONCRETE SLAB
PERFORATED ALUMINUM ACOUSTIC PANEL
EXHAUST SILENCER
HANGER
INTAKE SILENCER
OR
ACOUSTIC LOUVERS
EXHAUST PIPE
BRICKWALL
ACOUSTIC DOOR
DISCHARGE SILENCER
DIESEL GENSET
PLINTH

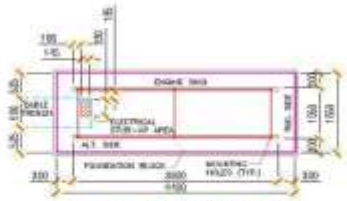


DG. ROOM LAYOUT

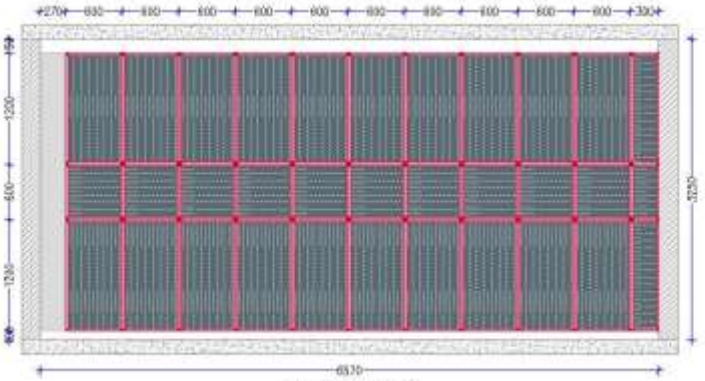


SECTION - AA

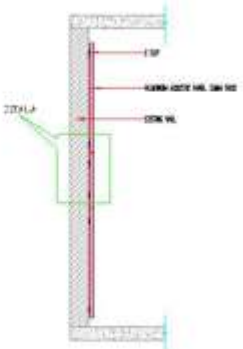




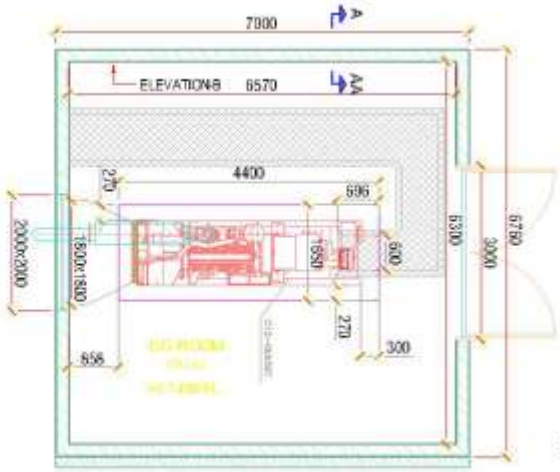
FOUNDATION DETAIL



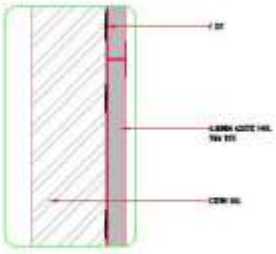
ELEVATION-B



SECTION A-AA



PLAN



DETAIL -A

Product Data

In a situation where there can be leaks around a door, through which sound can pass, there will be reduced sound attenuation. Therefore, not only does the fabrication period of **ACOUSTIC DOOR** is carried out in great care, but also the installation process is meticulously done to ensure high performance and quality.

The importance of good sealing method can never be underestimated. A door with a reduction factor of 40dB with a leakage factor of only 1% will have a true reduction of 20dB.

Applications

ACOUSTIC DOOR are excellent for sound attenuation and fire resistant performance within certain environments that need a control of sound transmission through doorways.

Typical applications are as the following:

- control rooms
- music rehearsal areas
- office buildings
- genset room
- recording studios.
- hotels and hospitals.
- plant rooms.

Construction

ACOUSTIC DOOR come in two different types; steel and timber. They are designed to have a combination of superb acoustic performance with attractive finishes and easy installation.

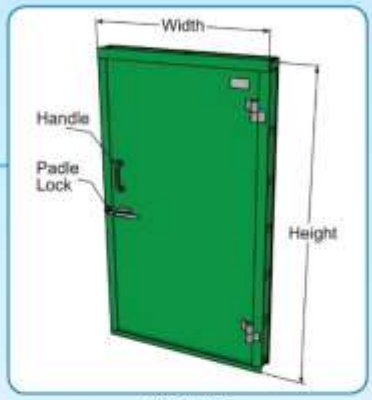
The doors consist of door leaves that contain an acoustic infill, selected to provide high damping and minimum acoustic coupling to ensure high transmission loss.

The outer and inner skins are of two different thicknesses to control the resonance effect. The doors come in complete sets that include frames, latch, locking system, hinges and door closer where applicable.

For steel doors, high gauge steel is used in constructing the door frame to rigidly support the door leaves.

Due to the heavy weight of the door leaves, a special designed adjustable ball bearing hinges are use to ease the opening and closing of the door.

For timber doors, high quality veneer finishes are used to ensure best performance and aesthetically satisfying.



Single Leaf

Double Leaf

Dimensions

The standard sizes of Doors which can be delivered almost immediately are as follows:

SINGLE LEAF	
Thickness of 60, 100 & 150 mm	900 mmW x 2100 mmH
	1200 mmW x 2100 mmH
	1500 mmW x 2100 mmH
DOUBLE LEAF	
Thickness of 60, 100 & 150 mm	1800 mmW x 2100 mmH
	2100 mmW x 2100 mmH
	2400 mmW x 2400 mmH

Other dimensions are also available on request with higher acoustic performance (STC) rating.

Application Notes

Whenever ventilation is required in the enclosed compartment and at the same time noise is to be controlled, installing duct silencers or attenuator are the best way to solve the problem. The silencers permit air to flow through while reduce the noise by absorbing it.

In selecting a silencer, a balance between noise attenuations and pressure drop need to be considered carefully. By using internally developed software, **NOISE CONTROL** can help to make the right choice quickly and most importantly, accurately.

Introduction

DUCT SILENCER are designed to efficiently reduce noise by generator sets, air handling systems, compressor, blower system and all situations requiring air intake and outlet for these equipments to operate.

A duct silencer should always positioned in the plant room and if possible as close to the noise source as possible. Normally for a single equipment, two units of duct silencers - intake and discharge is required to effectively reduce the noise to a desired level.

Construction

DUCT SILENCER are available in two different models, which basically have two different thicknesses of splitters - 200 mm and 300 mm. The thicker the splitter the better performance at lower frequencies. Each of the models have six length sizes from 900 to 3000 mm. The cross sectional area has no limited size. The performance or the insertion loss of each model is shown in the table 1.

DUCT SILENCER will be supplied in sections whenever the silencer dimension exceeded 2100W x 2100H x 2100mmL. This will make the transportation and installation easier. The assembly of sectionalized silencers to be done at site.

Features

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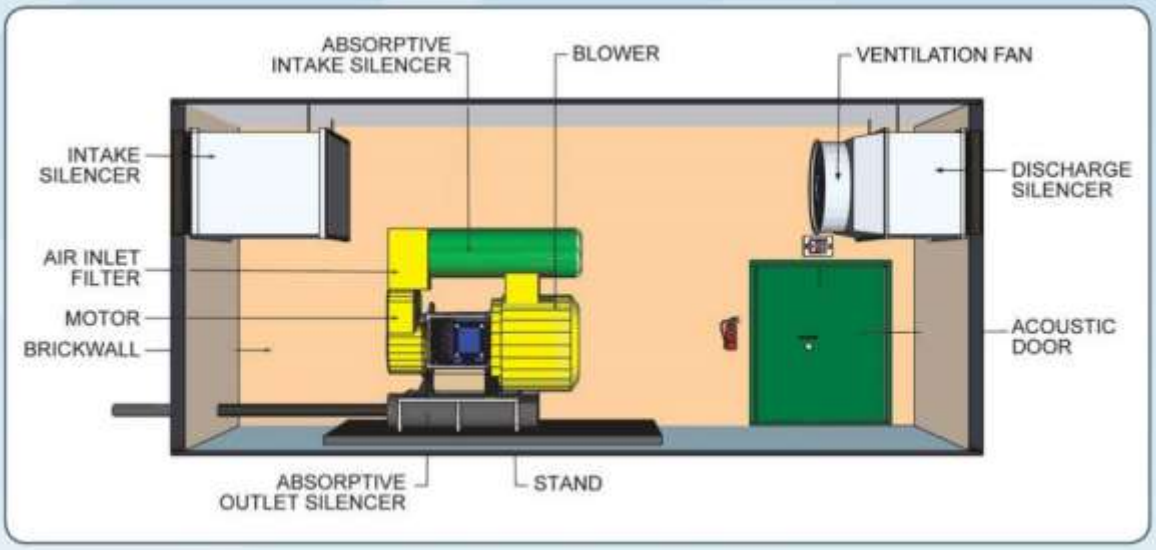
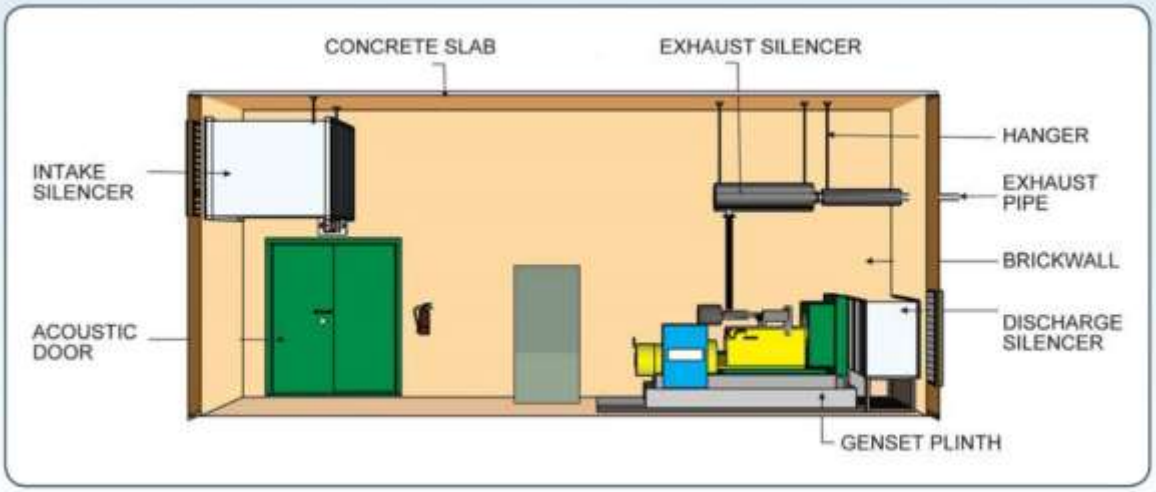


ACOUSTIC TREATMENT ON BLOWERS



ACOUSTIC TREATMENT ON DIESEL GENSET

Product Data

EXHAUST SILENCER come in standard, stock silencers for general-purpose applications and custom models to fit most OEM engines. These include:

MODEL IXP - Multi-Chamber Reactive Type Attenuation - 30 dB

MODEL IXS - Straight Through Absorptive Type Attenuation - 20 dB

MODEL IXC - Supercritical or Combination Attenuation - 35 dB

Applications

EXHAUST SILENCER are designed to efficiently reduce inlet and discharge noise of diesel engines, blowers, vacuum pumps, compressors and all situations requiring control of intake or outlet equipment noise.

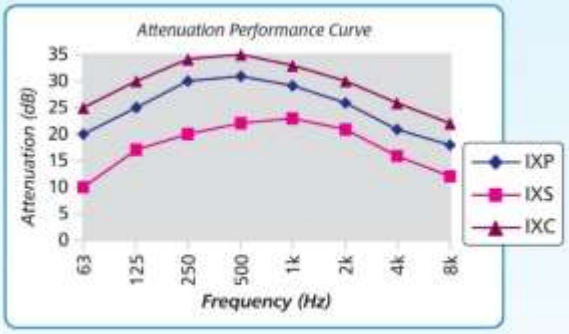
Construction

All silencers are constructed from heavy gauge hot rolled cold quenched sheet steel with all welded construction. Internal components are stiffened and braced to minimise resonances and vibration induced fatigue. Flanges are supplied to Table C or American National Standard Institute (ANSI) requirement. Threaded pipe ends are to BSP or metric threads. Drain plugs are fitted as standard for removal of condensate. All external surfaces are finished with high quality silicone based heat resistant aluminium paint which provides lasting protection at temperatures up to 600°C.

Selection Guidelines

When designing an exhaust system there are a number of factors that should be considered to maximize the design in terms of performance and cost. A few of the items that should be taken into consideration include:

- Acoustic Environment into which exhaust is discharging
- Engine Rating, i.e. - exhaust flow
- Allowable engine back pressure
- Engine exhaust outlet noise level
- Engine Exhaust Outlet Design, i.e. single or dual outlets
- Exhaust Piping Arrangement within engine room
- Exhaust Piping Support, Anchoring, and Guiding
- Exhaust Stack Height
- Configuration of Exhaust Silencers, i.e. single or dual inlet



Application Notes

NOISE CONTROL has created comprehensive lines of **ACOUSTIC WALL SYSTEM** to meet the changing and demanding needs that are faced by architects and professional interior designers. We offer a variety of core materials and finishes for unlimited options. Traditional acoustical products focus on sound absorption. While absorption is an important ingredient, effective acoustical design can only be realized with a balanced approach that uses all of the ingredients in the acoustical palette.

Applications

ACOUSTIC WALL SYSTEM are suitable for a wide spectrum of applications. It is individually designed to suit everyone's need where sound absorption and value are the main criteria. The systems provide absorption, modulated and fractal diffusion, variable acoustic performance, structural acoustics, electronic architecture and multi dimensional shape optimization.

Typical applications are in auditoriums, theaters, offices, libraries, recording studios, listening rooms, conference rooms and any architectural space where acoustic and aesthetic looks are of main concerned.

Selection Guidelines

ACOUSTIC WALL SYSTEM consider two essential factors to achieve the required room specifications. They are acoustical and aesthetical designs.

As far as acoustics is concerned, Reverberation Time (RT), rate of decay of multiple sound reflections, is the most crucial point to consider. It can affect how well people understand speech, and it can also change the way music sounds.

The second point is to consider the aesthetical design of the room. The regular flat, square panels can be transformed into state-of-the-art panels after being erected in any shape and size.

ACOUSTIC WALL SYSTEM ensure the uniqueness and sophisticated interior looks of any desired rooms.

Construction

Wall insulation for pump room & spinning machine.

ACOUSTIC WALL SYSTEM are made to different densities to cater any type of acoustic environment. The products are manufactured from two kinds of acoustic infill which are rockwool and fibre glass. These are the main elements that control the sound.

The top layer of the materials used for the panelling are the choice of fabrics, wooden panels or decorative perforated sheet. These layers not only provide different measurement to the RT but also give superb finishing.

Their superior tensile strength allows both high performance and cost-effective with ease of installation. Different infill with different densities is specially selected to give the optimum overall noise absorption coefficient.

Product Data

Whenever space is the limiting factor in designing Acoustic Treatment system, **ACOUSTIC LOUVERS** are the best bet to solving the problem. Serving a dual functions - reducing the noise and at the same time performs as weather louvers, **LOUVERS** is easy to install.

Aesthetically pleasing, they consist of fabricated metal louver blades with acoustic infill, alternated with air gaps and fitted into a four sided metal case.

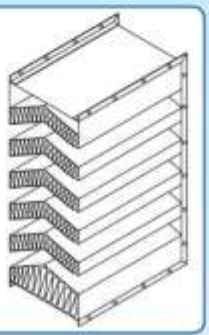
Applications

Because of their excellent noise reduction capability, **ACOUSTIC LOUVERS** can be used in almost any situation which need to control the noise but at the same time must permit the flow of air. The modular design and wide range of sizes and finishes allows them to be used in most industrial or commercial projects. They are ideal for use in any of the following applications:

- Plant room ventilation
- Air conditioning plants
- Power stations
- Cooling towers
- Diesel generator sets Canopy
- Refrigeration plants
- Pump Houses
- Ventilation exhaust plenum chambers

Model Lx

This model has a special designed, low profile blades, at a pitch of 150mm and at an angle of 35 degrees. As such, the design prevents line-of-sight through the Louvre, resulting in an enhanced high frequency acoustic performance and an extremely low pressure drop.

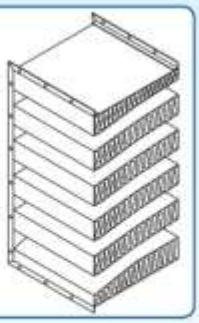


Features

ACOUSTIC LOUVERS come in two models - **Model Lx** and **Model Ly**. Each model offers of two different length, 300mm and 600mm. The maximum single unit available is 2400mm width and 2400mm in height. If a bigger size is required, it can be done through combination of modules.

Model Ly

Where else in this model, the specially designed blades are set at a pitch of 300mm and thus, provide a superior low frequency acoustic performance in the critical 125 Hz and 250 Hz octave bands.



Construction

ACOUSTIC LOUVERS consist of fabricated metal blades with acoustic infill placed internally. The open area between each blade has been carefully designed to gain maximum acoustic performance and minimum airflow resistance. The casings are fabricated from galvanised iron or mild steel and have folded flanges both at the front and back. This design provides extra rigidity and the means for fixing the louvre blades in position. A bird guard, manufactured from 25mm square galvanized wire, can be supplied fitted to the rear face of all models, if required.

Versatile, sustainable sound absorbers

Quietstone Light is a rigid, durable absorber made from recycled glass. The material is suitable for external use, indoor use and settings which require high impact resistance. It can be worked on site, pigmented or treated with a range of finishes and is non combustible, chemically inert and non fibrous. Panels can be either mechanically fixed or bonded and a range of sizes are available including custom options.

Key Features

- High sound absorption
- Non combustible
- Weather resistant
- Self bearing
- Easily cut on site
- 94% recycled glass
- Bespoke sizes available

Technical properties

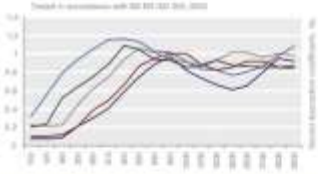
Physical properties

Standard width	600mm
Standard length	1200mm
Thicknesses	15 -100mm

We can make other sizes with a maximum length of 2.4m.
A small set up charge is incurred.

Weight at 25mm thickness	8 kg/m²
Weight	320kg/m³

Acoustic Performance



Fire resistance

BS476: Part 6: 1989 - Class 1
BS476: Part 7: 1997 - Class 0

Freeze/thaw resistance

EN 1338 - Class 0

Mounting parameters:	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	EN ISO 11654, α_w
25mm panel, 50mm air gap	0.10	0.30	0.75	0.85	0.65	0.90	0.60 (M) (H) (H) class C
25mm panel, 50mm mineral fibre	0.05	1.05	1.10	0.00	0.00	0.00	0.00 (L) class A
50mm panel	0.10	0.35	0.85	0.85	0.65	0.85	0.65 (M) (H) (H) class C
50mm panel, 25mm air gap	0.20	0.80	1.00	0.80	1.00	1.00	0.90 class A
25mm panel 12 gap for fixings	0.00	0.75	1.00	0.90	0.00	0.85	0.55 - class A